What is claimed is:

1. A process for predicting adverse responses to drugs effecting a target by assessing the responses of animal models, comprising:

(a) providing a genetically engineered non-human mammal wherein said mammal exhibits either over-expression or under-expression of a target gene;

(b) subjecting said mammal to a pre-selected perturbance causing a desired physiologic stress in the mammal, and

(c) thereafter evaluating the responses of said genetically engineered mammal by determining the metabonomic profile of the mammal.

2. The method of claim 1 wherein the genetically engineered non-human mammal is a rodent.

3. The method of claim 1 wherein the evaluating is accomplished by comparing the metabonomic profile of the genetically engineered mammal with the metabonomic profile of a substantially identical non-engineered mammal which has been subjected to the same pre-selected perturbance.

4. The method of claim 1 wherein the metabonomic profile is determined using urine.

5. The method of claim 1 wherein the metabonomic profile is determined using serum.

6. The method of claim 1 wherein the metabonomic profile is determined using plasma.

7. The method of claim 1 wherein the metabonomic profile is determined using milk.

8. A method of claim 1 wherein the pre-selected perturbance is a low dose of lipopolysaccharide.

9. A method of claim 1 wherein the pre-selected perturbance is exposure to flashing strobe lights.

10. A method of claim 1 wherein the pre-selected perturbance is reversal of the light dark cycle.

11. A method of claim 1 wherein the pre-selected perturbance is restraint.

12. A method of claim 1 wherein the pre-selected perturbance is oxidative stress.

13. A method of claim 12 wherein the oxidative stress comprises feeding buthionine sulfoximine.

14. A method of claim 1 wherein the pre-selected perturbance is viral infection.

15. A method of claim 1 wherein the pre-selected perturbance is introduction of genetic material which results in increased sensitivity to develop particular disorders.